



National Science Foundation Advanced  
Technological Education Program

Award #1700568

UNG  
UNIVERSITY of  
NORTH GEORGIA  
LEWIS F. ROGERS INSTITUTE  
FOR ENVIRONMENTAL AND  
SPATIAL ANALYSIS

## Successfully Applying Geospatial Engineering and Technology for Workforce Development

The overall goal of the National Science Foundation (NSF) Advanced Technological Education (ATE) supported Applying Geospatial Engineering and Technology (AGET) project is to improve the education of undergraduate engineering and science technicians at the University of North Georgia (UNG) by preparing students to succeed in engineering, science and technology professions. This is accomplished through the development of an associate degree and a certificate program in geospatial and engineering technology with an emphasis on increased participation of underrepresented groups. Three measurable objectives were attained during the 3-year project performance period.

The first objective, curriculum development, prepares students to succeed in fast-growing technician professions through development of two new academic programs. An Associate of Science in Geospatial Engineering Technology (GET) with directed emphasis areas and a technician level certificate in Land Surveying have been developed by the Lewis F. Rogers Institute for Environmental and Spatial Analysis (IESA) at UNG's Gainesville Campus.

To support the second objective of workforce development, an Executive Advisory Board (EAB) was formed with the support of local and regional industry, governmental, and educational professionals. Facilitated with strong industry insights and

support for the AGET project, the project has significantly and successfully strengthened curricular development and implementation. Representation from local and regional industry and government agencies guided the newly developed programs to create professionals (students) immediately prepared for employment. In conjunction, many associated industries and government agencies have pledged scholarships, internships, and job placements after graduation. Additionally, surveying and geospatial firms seeking to enhance employee skills are sending their present workforce to complete classes in our new programs. To date, several students who have completed the new classes and programs have been employed by surveying and engineering companies. The project is in the process of providing a seamless transition from high schools through the state of Georgia's dual-enrollment program and technical colleges through articulation agreements to the stated new associate degree and certificate program. It is of note that the newly developed geospatial, engineering and science technician career pathways are implemented based on core competencies for geospatial and engineering technicians.

The third important objective of the project was project information dissemination including informing local high schools and early college students about the advantages of geospatial engineering and technology

related programs and careers. The dissemination included thematic workforce development areas of discipline related applications, instrument demonstrations, and real-world professional examples. The project PIs successfully developed and disseminated practicums and materials to UNG faculty and others to serve as new content applications for a variety of courses. The project team has also attended and disseminated at local, regional, and national conferences. Additional dissemination activities are planned to share outcomes and lessons learned from the project as the project received a one year no cost extension to assist in unfinished dissemination activities that occurred as a result of the pandemic.

Lastly, an external evaluation of AGET has been designed to: 1) help the project better serve its constituents and improve its effectiveness related to technician education and student success, and 2) serve the broader geospatial, engineering, science and technology education communities by documenting accomplishments and disseminating critical project findings. As a result, a successful implementation of the project has encouraged the project team to seek additional funding opportunities to support societal needs through curriculum and workforce development.